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Role of Neuropeptides in the regulation of fish reproduction

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Neuropeptides exert an important role in the regulation of both mammalian and non-mammalian reproduction reproduction. It binds to receptors in target tissues, and elicits a number of downstream cascades including changes in secondary messengers, phosphorylation and eventually altered transcription. Various neuropeptides (vasotocin; VT, Isotocin; IT, Mesotocin; MT, Neuropeptide Y; NPY, Secretoneurin b; SNb, kisspeptin 2; kiss2, etc. has been reported in several tissues of teleost, mainly brain. The endocrine regulation of teleost reproduction is achieved by the coordinated actions of several peptide neurohormones. Recently, in the catfish *Heteropneustes fossilis*, *VT*, *IT*, *SN*, *kiss2*, *novel peptide* , *ITa* has been cloned and characterized. These peptides were shown to be involved in the regulation of catfish reproduction via influencing steroidogenesis, oocyte maturation, ovulation pathway. These peptides were also modulated by gonadotropin releasing hormone (GnRH). They potentiate GnRH effect on on gonadotropic cells, and also act directly on the pituitary cells. Thus, our investigation showed that neuropeptides play positive role in regulation of GnRH throughout the Brain-Pituitary- Gonadal axis and upregulates LH cells in the pituitary via playing vital role in catfish /teleost reproduction.